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ABSTRACT

Studies of bilingual infants are in disagreement as to the point at which the child distinguishes two languages in his linguistic environment. In this paper, data from two classic works by linguist-parents on bilingual infants are compared with data collected from the author's own bilingual daughter. Five types of behavior are described which might provide evidence that the child is able to perceive the existence of two language systems earlier than has been proposed. In discussion of the possession of two "native" languages by the bilingual child, data from the author's daughter is presented, showing her to possess two coexisting grammars and social norms for the use of each. This data was collected by videotape when the child was 3 years old. This study is relevant to questions of the metalinguistic abilities of bilingual children and to educational programs which receive and educate the truly bilingual preschooler. (Author)

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LOUIS, HILDEGARDE, AND MARY
A COMPARATIVE STUDY IN INFANT BILINGUALISM

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LOUIS, HILDEGARDE, AND MARY
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Introduction

Recent studies in developmental psycholinguistics have added to our knowledge of the manner in which a child acquires his native language. Studies in developing grammars abound and in them, credit has been given to the child's ability as linguist, i.e. the child is able to take data in the form of the language that he hears and analyze it in such a manner that he is finally able to understand and use correctly the grammar of the language to which he is exposed. There remain, however, many unanswered questions as to how the child goes about this task, what innate knowledge he brings to bear on this task, and what he must learn before learning the language.

Another field of current scientific interest is that of bilingualism and the ability or the inability of the bilingual individual to separate his two languages.[1] Studies of the language systems of the bilingual individual include considerations of both the independence and the interdependence of the two systems. In much of the literature on bilingualism the subject under consideration is the bilingual child. Implicit in most studies of bilingual children is the notion that a child has a first language and a second language.

Studies of bilingualism and studies of child language acquisition come together in an interesting way in the study

of infants who have been exposed to two languages since the pre-speech period, the bilingual infants who become bilingual children. Such children may be considered to have two native languages. Confronted with the necessity for learning two language systems, how does the child go about differentiating and learning these two languages? There are those who say that he does not. Some would claim that the child who has learned two languages simultaneously is a confused individual who never masters either language; that he is the epitomy of the compound bilingual who has one language system with two modes of expression both of which are interdependent. Such a model, however, has never been shown to exist on the basis of empirical evidence in the study of bilingual individuals. Since children in bilingual communities the world over do successfully learn two languages simultaneously and do function appropriately in sociolinguistic settings requiring the use of one or the other language, perhaps the child does differentiate and distinguish his two languages at an early age. This is an empirical question and assuming that the child's linguistic ability does indeed include the ability to acquire two native languages, then we need to go further and pose theoretical questions related to the child's language learning ability based on the evidence of his early bilingualism.

Problematic in all studies of bilingualism is the definition of the term. It is necessary to define, for each purpose, the class of bilinguals which will be included in the study and

each definition usually turns out to be vague. In this case also the class of bilingual infants will be defined by vague parameters.

Conditions considered necessary for the infant to learn two languages simultaneously are those which expose him to both languages in a natural situation. It is premature to be explicit as to quantity and quality of that exposure, since no one is certain as yet of the relationship between language learning by the monolingual child and the quantity and quality of language in his linguistic environment. In the absence of a definitive level of exposure necessary for the simultaneous acquisition of two languages, the bilingual infant will be defined as one who is exposed to two languages in such a way that he learns both of them. In a bilingual community it may be that both parents are bilingual, or it may be that there are monolingual speakers of both languages in the child's community. The community of the infant includes parents, older siblings, extended family, or any other charged with the care of the child. The older child may also be part of a larger community which includes friends of the family, playmates, and other inhabitants of a wider community. The older child's linguistic environment includes language from these people as well as from communication media such as radio and television.

For the first two years, however, with the purpose of setting limits on the child's community, that community will be considered to consist of those who are at one time or another his caretakers and companions, including, but not limited to, parents, siblings, baby sitters, and members of the extended

family. It is from these that the child receives the language input of the first two years which constitutes the data that he uses to construct his emerging grammar. It is a mistake to equate the terms 'native language' and 'mother tongue', for the term 'mother tongue' implies that the mother is the sole caretaker of the child and the chief source of language input to the child. In many cases this may be true. In other cases, however, especially in cultures where the extended family also assumes responsibility for the care of the child, 'mother tongue' may be a misnomer. Bilingual infants, therefore, will be those who receive from their linguistic environment some reasonable extent of exposure to two languages. Such situations are considered to arise naturally in bilingual countries or in language contact settings. These will be designated here as natural bilingual situations.

Bilingual communities for the infant may be created by the conscious decision of a parent or caretaker of the child to speak only one language to the child, although that person is bilingual and the larger community is monolingual in the other language. These will be referred to as artificially created bilingual situations. There is also a sort of middle ground where, within a monolingual larger community, one of the child's caretakers is a monolingual speaker of another language. In this case, however, the child's bilingual environment is more nearly a natural one than one that is artificially created.

Perhaps because of the theoretical complications involved, perhaps because so little is known about the language acquisition process in one language, there is a paucity of data on the language acquisition process of bilingual infants. The two best known longitudinal studies are those by Ronjat (1913) and Leopold (1939). There are several anecdotal accounts discussed in shorter papers, including Burling (1973), Tabouret-Keller (1962), Slobin (1973) and Imedadze (1960). For the past three years data has been collected by this investigator from a child being raised in a bilingual environment. In this paper the recently collected data will be compared with certain aspects of the data available in the two longitudinal studies by Ronjat and Leopold. It is not the purpose of this paper to assert definitive answers, but rather to see whether generalizations are possible about the process of simultaneous language acquisition on the basis of data available. If, on the basis of preliminary observations generalizations are possible, it should also be possible to propose hypotheses which can be tested using the methodology and techniques of modern developmental psycholinguistics.

The Bilingual Children

As was noted above, bilingual situations vary greatly. Before discussing the data from the bilingual infants, it is necessary to set forth the type of bilingual situation that each child was exposed to and note differences and similarities in

those linguistic environments, as well as to note the type of data available for each child. It will be necessary later to refer to those linguistic environments to account for differences in bilingual development. The three children, one boy and two girls, are Louis, Hildegarde, and Mary. Placed in bilingual linguistic environments, they have obliged us by doing what was expected of them --- they learned two languages.

Louis was born July 20, 1908, at Vienne sur Rhone in the south of France. His father, Jules Ronjat, decided to study the language development of his child, deciding at the same time that the child should be bilingual. He was advised to use the "one person, one language", method, with himself always addressing the child in French and the mother in German. In terms of the bilingual situation, Louis' community was a natural bilingual one. There were servants in the household who spoke both languages. For the first 20 months of his life, the only persons in his immediate environment who spoke French were his father and his father's relatives when they came to visit. His nurse was monolingual German speaking and his mother always spoke German to him, her native language. He also visited with his mother's family who spoke German. At 1;8 he spoke more German than French. Ronjat notes that he himself corrected Louis when he put German words in his French phrases, but that his mother did not do so when he put French words in his German phrases --- indeed, it was hardly necessary because it almost never happended. For eight weeks, between the ages

of 1;10 and 2;2, Louis visited with his father's relatives who all spoke French. At that time the child's two languages began to equalize, and at 2;9, he was using French words in German sentences, and seldom the reverse. When, at 3;7 months, Louis was visited by his German speaking grandmother and aunt, his languages again equalized. At 3;9 months he began playing with his bilingual friend Addi, whose parents, though bilingual, spoke German with each other, unless in the presence of someone who did not speak German. He and Addi began by speaking French, then used both languages, and finally, played together entirely in German, except in the presence of another child who did not speak that language. Ronjat notes that at that time Louis' monologues were in either French or German, depending upon the subject of the monologue and the presence of a French or German speaker within hearing. His imaginary friend Charles, however, spoke only French. Of the three children considered here, the case of Louis is by far the most satisfactory for two reasons:
1) His bilingual community was indeed that and not a special one created for a particular situation, except for the decision that his mother was to use only German with him and his father only French. Even that decision was based on the idea that each parent would speak to the child in his own native language.
2) Ronjat follows Louis' progress carefully through the first four years of his life and compares his progress with that of other bilingual children and with that of monolingual children, of both languages.

Hildegarde was the daughter of Werner Leopold, linguist and professor of German at Evanston, Illinois. She was born July 3, 1930, in Milwaukee, Wisconsin. Both Hildegarde's parents spoke German, although only to her father was it a native language. In the home, it was he who spoke to Hildegarde in German, all the rest of the child's normal community being English speaking. Leopold notes that although her mother spoke to her in English, there was a tendency for the mother to use "certain German words which the child had learned". (Vol. II, p. 13) When Hildegarde was 11 months old, the family went for a visit with relatives in Germany. There, her mother spoke to her in German. Consequently, when she began speaking, her first words were German. Leopold notes that although she had understood English when they began the trip, it was necessary for her to "relearn" English on their return. Except for that visit, Hildegarde's environment was predominantly English-speaking with her father providing the only input of German. Even friends who spoke German would use English with the child, on finding it her dominant language. When she was five years old, the family again went to Germany, this time for a six-month period. During this time, Hildegarde was exposed only to German and became German dominant. On returning to the United States, she required several days to again become comfortable speaking English. From that time, Leopold tried to make German the language of the home, but without much success since the larger community was monolingual English speaking and Hildegarde's mother preferred to speak English.

During the period shortly after her return from Germany, Leopold noted several instances where her words were English, but her pronunciation German. Except for the trips to Germany which were actually monolingual German experiences, Hildegarde's bilingual community was the most nearly artificial of the three. In essence, the source of her German was her father, with the exceptions noted above. In terms of a study in bilingual development, Leopold's study, although intensive, is incomplete. He accepts as data only those utterances which he himself has heard. Thus, differentiation in language usage due to social situation is not noted. He follows her progress very closely up to the age of two years. Beyond that, his notes are kept in diary form, and often are notations of ill formed sentences rather than correct sentences. Rather than giving the child credit for the incredible accomplishment of learning German with only the one model, he sometimes seems to chide her for not being able to speak a complete adult version of the language from the beginning. His data are reliable; his commentaries on the data are often without foundation.

Mary is my own daughter, born January 10, 1972, in Escondido, California. My decision to raise her as a bilingual was based on my experience with the bilingual language development of my two older daughters. Although I am fluent in Spanish, I tend not to speak it unless I am with someone who speaks little or no English. Therefore, when I started my graduate studies in linguistics, I invited my friend, from Hermosillo, Mexico to

come and stay with us and look after the children, especially Mary. When Gloria came, Mary was seven months old. Prior to that, I had attempted to use Spanish with the baby, but found that I was unable to do so, nursery language not being a part of my linguistic experience in Spanish. For ten months, while Gloria was with us, Mary heard almost equally English and Spanish, with Spanish probably predominating slightly. Gloria, being monolingual Spanish speaking, used only Spanish. The older girls and I used both languages with her, usually depending on whether Gloria was with us or not, although, by the time Mary began speaking, I became more comfortable using Spanish with her. Gloria returned to Mexico when Mary was 1;6, and the following fall we hired a monolingual Spanish-speaking baby sitter. Except for another two months during her third summer, a live-in baby sitter has been Mary's chief source of Spanish language input. Her older sisters and I also use Spanish with her occasionally, and she has books and records in Spanish. There is a bilingual Spanish-English community in Escondido, and although we are not a part of it, we are acquainted with many of the members of that community. When we get together, they speak to the child in Spanish. One of her older sisters is in a bilingual program at school, and teachers and friends of that sister also use Spanish with Mary. In terms of naturalness of exposure and equality between the two languages, Mary falls somewhere in between Hildegarde and Louis. She is English dominant, and her language development in English is advanced

for her age. Her Spanish, however, is also fluent, although her level of development is not the same as that of her English. Justification of these estimates of her fluency in each language will be made later. The data from Mary consists of notes kept by both Gloria and me when Mary was first beginning to talk; other notes that I jotted down from time to time as I noted particular examples of language development; approximately ten hours of tapes which are only partially transcribed, but which span the period of her development from 1;0 to 3;2; and one videotape made when she was 3;2, in which she was engaged in an unstructured play session with a person whom she believed to be monolingual Spanish speaking. In addition I have written one paper based on Mary's bilingualism at the age of 2;2.

These then are the three subjects, separated by time and space, as well as the languages that they learned. Are generalizations really possible from the experiences of three such children? Any patterns of similarity, any possible generalizations, should have a certain universal validity, at least for children learning languages in similar linguistic environments. On closer examination of the linguistic environments of the three certain similarities become evident: 1) They share the experiences of being children of linguist parents and living in what Ronjat calls "les milieux cultivès". 2) The language environment of each child included input from at least one speaker of each language who was a native speaker of that language. 3) Each child was expected to become bilingual and to profit

by the experience. 4) Whether or not it had any influence on the child's speech development, each child was corrected when he mixed elements of the two languages. In other words, language mixing was not socially acceptable or linguistically acceptable behavior.

All of the above factors may need to be taken into consideration in comparing the language competency of the subjects here with that of other bilingual children. It may be, however, that none of the above factors really affected the language development of the child. In any event, in spite of real and apparent differences in the environments of the children, there appear to be also certain similarities. Obviously it will be impossible at this time to say anything about the specific languages involved, although in a study of several bilingual children learning the same two languages we might be able to compare differing syntactic structures within the languages. The data from these three children do, however, provide us with insight into infant bilingualism and provide the basis for tentative hypotheses which can be tested by further studies.

Evidence For Early Awareness Of Bilingual Environment

One of the questions asked by investigators of bilingual infants relates to that point at which the child becomes aware that he is dealing with two language systems. Answers to this question have ranged from 1;6 to as late as 6 or 7 years. For Mary, I believe that this awareness occurred in the pre-speech

period, somewhere before 11 months. The cause of the disparity in answers to the question of awareness of bilingual environment is probably a lack of definition of the term 'aware' and differing opinions as to what constitutes evidence of the child's awareness. Also involved are differing theories about the child's role in the language acquisition process. In a theory of language acquisition which regards the child as a passive receptacle for language, awareness of the two languages would not be necessary for the development of the bilingual child's two languages. In a theory which regards the child as an active participant in the language acquisition process, shaping and reshaping successive approximations of the adult grammar, awareness of the existence of two systems is basic to the child's ability to construct two grammars.

Before discussing what is meant by awareness, it is necessary to determine whether there is evidence from monolingual children that there may be awareness of any systematic features of speech in the pre-speech period. Studies of monolingual children have shown that before the stage of actual speech production, the child has recognized and is able to imitate certain intonation patterns of the adult. (Tonkova-Yampol'skaya, 1973) Many children go through periods in which they produce long strings of unintelligible babbling with the intonation patterns of the adult language. The child perceives and tries to produce these suprasegmental features of his language environment. One might say that he is aware of the differing intonation patterns in the speech he hears.

Part of the task of the child learning language is to choose, out of all the speech sounds with which he is bombarded, just those which are phonemic in the language he is learning, i.e. which sounds actually differentiate meaning and which sounds are simply allophonic variants of each other. In order to do this, the child must be aware at some level of consciousness of both the flow of speech and the segmentation of speech. It may be argued that this knowledge is innate and that the child does not have to be conscious of language to make these distinctions. Such an argument again has the child as a passive recipient rather than an active participant in the language learning process.

Bloom (1970) has given evidence that the child does indeed construct his grammar in an individual way and that children's language acquisitions can be considered a series of approximations of the adult grammar. In order to accomplish the construction of a grammar of any kind, the child must have a consciousness of language as systematic, rule-governed sequences of morphemes. Pertinent to this consciousness are those studies which show that the child plays with language, actively changing it, creating new sequences of words and sounds. (eg. Weir, 1962). In order to play with language in this fashion, the child must be aware of possibilities in language and consistencies and inconsistencies between his play and the adult system.

A definition of 'awareness of systematic language' may be stated as that critical level of consciousness necessary to the child for him to begin formulating grammars of the languages

that he is learning. This awareness is certainly not linked with words and does not reflect conscious thought. It may reflect some interaction of the innate abilities of the child with his linguistic environment, but if the child is really creating grammars, then he has an awareness of those facets of language which are likely candidates to fit into syntactic and semantic categories which he, either innately or through having learned, believes to exist.

Given this definition of awareness of systematic language for the monolingual child, what constitutes awareness of two systems for the bilingual child? Is there any reason to believe that, prior to the point where the child begins actively producing intelligible speech, he might be aware of the existence of two systems? Children's early production of adult-like intonation patterns provides just such evidence. Different languages have different intonation patterns; children pay close attention to intonation patterns. Different languages have different phonological inventories; children pay attention to the phonological inventories of the language they are learning. It is certainly plausible that a child might recognize that the intonation patterns and the phonological inventory of certain speakers are different from those of others. This in itself does not constitute awareness of two language systems, for certain speakers in the child's linguistic environment may speak the same language with different 'accents'. What is claimed, however, is that, even in the pre-speech period, the child raised in a bilingual environment has clues available

which might lead him to conclude that he is being exposed to two systematically different means of communication. No claim is being made as to the child's understanding at the pre-speech period, it is simply that he pays attention to acoustic features of speech which differ systematically among languages and that on the basis of these features he may make preliminary judgements about the languages in his environment.

More so than in the monolingual child, the syntactic rules and the social rules of speech interact in the speech behavior of the bilingual child. It is sometimes difficult to make decisions about the linguistic competence of the child based on his performance in certain social situations. Just as the child makes mistakes in developing his grammar, he may make mistakes in developing sociolinguistic rules for the use of language. Monolingual children must learn, for example, that, while it is all right to make demands of and give orders to siblings, one must use a more respectful tone of voice and even different syntactic structures when speaking with parents and other adults. The child in a bilingual community must add to this some notion of which language to use with whom, as well as notions of proper register and speech style in two languages. In assessing the competence of bilingual children it is important to keep these facts in mind and be sure that our criteria for judgement are suited to what we wish to judge.

Looking at what might be considered evidence that the child is aware that there are two languages being used in his linguistic environment, we find that both linguistic and sociolinguistic behavior are involved. At the upper limit, a realistic

claim is that when the bilingual child is calling his two languages by name, he is aware of his own bilinguality. This is not to say that the child is aware of the parameters of bilinguality in his environment ... i.e., he may believe that everyone is bilingual, or he may not realize that he is doing anything unusual. He may realize that certain people in his environment are monolingual speakers of one or the other language, but not realize that other speakers have a different pattern of language dominance. Ronjat gives some amusing anecdotes about Louis' reactions to people who did not fit his expected pattern of language behavior. When he was 2;3, a friend came to the house who spoke French with a heavy German accent. Ronjat forgot to tell the friend to use only German with the child, and alone with the child, the friend spoke his distorted French mixed with German. Louis was indignant and it took his parents a whole day and a great deal of insisting to convince the child to sit and chat nicely with the man. About the same time, there was a new maid in the house, a German speaking girl replacing a French speaking girl. Louis expected the new girl to speak French as the other one had done, and it took almost a day for him to accept that she did not and to address her in German. There were other incidents, but these two are representative.

The three subjects in this study all named their languages by name before the age of 2;6. Mary was requesting to be spoken to in English or in Spanish by 1;11. Ronjat was careful not to call the child's attention to the abstraction of language by naming the languages. His correction of the child consisted of phrases such

as "Speak like Mama," or "Speak like Papa." Yet, by 2;4 Louis knew that his two languages had names and he was calling them by name. Leopold quotes Hildegarde as asking him how to say a word in German a 2;5. Assuming that the point at which the child can identify his languages by name represents a point at which he is telling us that he is aware of the presence of two languages in his environment, what can be considered evidence that the child is aware of a bilingual linguistic environment before this point? (Keeping in mind that our definition of awareness is that critical point of consciousness necessary for the child to begin formulating two separate grammars.)

In searching for behavior which might be used as evidence that the child has reached that critical point, both linguistic and sociolinguistic behavior might be taken into account. The problem of which is which, is confounded in the bilingual child by the fuzzy line between the two types of behavior. The following represent five specific behavior patterns which the bilingual child might exhibit different from the monolingual child: 1) existence of a bilingual lexicon at the one word stage of speech, 2) translation from one language to the other, 3) language specific illocutionary acts, 4) use of the language appropriate to the speakers of that language in the child's environment, and 5) consistent combination of words from the same language in the beginning syntactic stage, i.e. lack of language mixing. Of the above types of behavior, only two of

them can be considered purely linguistic, the use of a bilingual lexicon and the act of translation between languages. Whether or not the use of language specific illocutionary acts is linguistic or sociolinguistic is at the present moment a theory specific problem. Certain functional theories of grammar would place the illocutionary force of an utterance somewhere in its underlying representation. Other theories would place the illocutionary force of a sentence outside the linguistic realm and into the sociolinguistic realm. The language in which a child addresses another person is a sociolinguistic matter and may be determined by many things. The mixing or failure to mix languages may depend as much on sociolinguistic features of the child's environment as on the child's own grammar.

The discussion below considers each of the behavioral patterns as evidence for awareness of bilingualism, whether any one is necessary for us to say that the child knows that two language systems exist, and whether any one is sufficient.

1) The existence of a bilingual lexicon: If the child from the earliest stages of speech has a dual naming system for objects in his environment, he certainly exhibits a pattern of development different from that of monolingual children. But is this evidence of bilingualism? Certainly in an adult or older child we would not consider the ability to name objects in two languages evidence of bilingualism. The infant, however, has limited performance ability in any language, so if he exhibits equal or similar ability in two he might be said to know two languages. Conservatively the bilingual child at the one word stage of development can be

given gredit for knowing that objects in his environment have more than one name if he has a dual lexicon. This is not quite the same as having an awareness of two systems. The reverse, however, would be a more positive proof. If the infant raised in a bilingual environment did not have some kind of dual lexicon we would be quite surprised and have to say that he was not bilingual and had not learned that there were two language systems in his environment.

2) Translation from one language to the other: Translation at a very early age would be some situation in which the word or some spoken form of one language evokes from the child an equivalent word or a translation in the other language. This is different from the dual lexicon in that it is not the object which prompts the child to speak but rather something more abstract. Leopold argues that these early translations are not translations as the adult uses them, but rather the substitution of a passive word in the child's vocabulary for a more active one. Lexical substitution synonym for synonym does occur in monolingual children but is probably a later development and is a part of the child's learning to participate in discourse. If these early translations by bilingual children are not translations but merely substitutions, then these bilingual children are at the very least more precocious in their language development than monolingual children. It could be argued that because there are more synonyms in his environment the bilingual child has lexical substitution available at an earlier stage. A monolingual American child with a British nanny might do much the

same thing if on hearing the word "truck" from his mother he replied with the word "lorry". It would be necessary to investigate more closely the child's translations to see if they differed qualitatively from such a possibility in the monolingual child.

3) Language specific illocutionary acts: Many of the child's early utterances are identifiable illocutionary acts, especially that of requesting. The child may have many ways of performing that act. He may only point and/or cry. If recognizable speech forms accompany this act, however, these utterances may be said to have illocutionary force. If the child's illocutionary acts have language specific utterances accompanying them, and especially if these utterances differ qualitatively, then this might be evidence for the child's awareness of two language systems. It might be argued, however, that the child was only repeating in some way what he heard and that features in different languages have differing perceptual salience. This is probably true, but the existence of the possibility of translation in this case and the child's failure translate argues for the child's emerging awareness of two discrete systems and the beginning development of those two systems.

4) Use of the language appropriate to speakers of that language in the child's environment: If the child consistently uses the proper language according to speaker it is at least some indication that the child may be aware of two systems and has those systems associated with certain persons. In some

sense the child knows that "in order to communicate with this person I must use this part of my dual lexicon". Failure to use the appropriate language does not constitute evidence that the child is not aware of two systems. The child may know that everyone in his environment is bilingual therefore there is no need to restrict himself to one system in his attempts to communicate. One might argue that use of proper language with the proper person is a matter of using appropriate linguistic register. Children of the level of development that we are discussing here, i.e. at the one and two word stage of language development, have not been found to make distinctions in language according to social position of the person they are talking to. Older children, at 3 or 4, do change their register when speaking to younger children and animals. Unless our bilingual children are socially precocious, they probably cannot be credited with this ability at the one and two word stage.

5) Lack of language mixing at the beginning syntactic stage: By the time he forms two word sentences and begins showing evidence of constructing his grammar, if a child consistently joins words from the same languages and fails to mix the two, that must be considered evidence that he is constructing two separate grammars. On the other hand, language mixing at this early stage is not evidence for failure to be aware of two languages. There can be other reasons for language mixing. If the adults in the child's community mix languages, the child should be expected to do the same. If the child's desire to communicate outstrips his competence in the language he is using, he may

be expected to use lexical items or constructions that he knows from the other language to fill in the gaps. Especially pertinent here are individual differences in children. As was illustrated in Brown, Cazden, and Bellugi (1973) Eve used plurals long before Sarah did, but did not use them consistently. When Sarah began using plurals she used them correctly. Sarah, it seems, waited until she had the system a little better analyzed. Some children like to talk and will make every effort to communicate even when they are unsure of the linguistic system they are using. Others prefer to be sure they have analyzed the system correctly before using it. There are, of course, other reasons for language mixing in children, including slips of the tongue and failure to analyze correctly which feature goes with which system. Even if there is mixing, if the analysis of the child's speech shows language specific differences in construction, such as different word orders, in certain types of sentences according to language being used, the child must be credited with an awareness of two systems and an attempt at formulating two separate grammars.

Given the criteria just discussed, let us now turn to the data from the three subjects to see what evidence there is for early awareness of two systems and early development of two grammars in each child. After looking at each child, it will be possible to compare their development for similarities and differences and to make some generalizations about early bilingual language development.

Louis' first words were from a nursery language which Ronjat calls "Ammensprache". These consisted of onomatopoeiatic expressions and special forms of words used with babies. These he used almost exclusively between 1;1 and 1;4. At 1;4 he was using the word Brot to ask for bread from his mother and pain to ask for bread from his father. At 1;8 he voluntarily supplied both names from his dual lexicon, saying while looking at a boat on the river "Schiff, bateau" and while pointing to his eyes, "Auge, oeil". From 1;6-1;9 Ronjat notes that the child's vocabulary consisted of names of objects in the two languages, and a list of pivot-like words, such as mehr, noch, nur, sehr, auch, in German and a similar set in French (unfortunately he doesn't list the French words so we do not know if they were translations or not). There was also a "common vocabulary" which he used with both parents --- words like te, üt (sucre) bua (biburon), papa etc.. During the period from 1;6-1;9 Ronjat gives us only one clear case of the child's mixing of the languages[2], but states that any mixing of lexical items was always in the direction of putting German words, usually names of objects, into French statements. At 1;8 Louis is more able to express himself in German than in French, and Ronjat claims that the child is aware of the inequality of his two systems in himself.

Two early translations (or substitutions) occurred at 1;2 and 1;3. There was a game they played with the child where he had to say "bitte" and "danke" in German. Ronjat was playing with the boy and telling him "Dit papa" and Louis replied "papa". His father then said, "Dit merci" and Louis replied "Danke". This occurred

at 1;2 and Louis was not heard to say "merci" until two months later. At 1;3 a similar circumstance occurred. Louis was accustomed to counting a group of brightly colored toys on his little table. He was known to count them in French and say "un, deux". He had not been heard to count them in German. His mother was playing with him and counting "Eins, zwei, drei". Louis replied, "un, deux". Whether this is actual translation, or substitution of a passive word for an active word, Louis certainly had an understanding of the possibility of substitution far beyond the experience of monolingual children. More clear evidence of translation comes at 1;9 when he was in the country with his French relatives. There he was translating to his monolingual German nurse what others of the household were saying to her, and vice versa. At 2;2 he was carrying messages back and forth between his French speaking grandparents and his German speaking nurse. Between 2;8 and 3;6 his French speech had in it some German calques, such as comment grand for wie gross and comment loin for wie weit. But this was the exception and not the rule. The data given so far indicate that Louis knew two lexicons, and knew when to use them appropriately. Is there any evidence that he was aware of two differing systems? This evidence is available in negative form. Between 1;6 and 1;9 he regularly formed German infinitives with -n and German plurals such as Soldat-Soldaten, and Mann-Manner, but he was never heard to form French plurals with -n or -er or to form French infinitives with -n. Of the possible evidence for early awareness of bilingualism, the data available for Louis

shows him to exhibit several. Starting at 1;4 he shows ability to use a dual lexicon and to use the proper word with the proper person. That he was aware of a dual lexicon before he used it was shown by his early translations of "merci" and "eins, zwei". He exhibited the ability to translate appropriately at 1;9. His early sentence combinations were with only minor exceptions, combinations of words from the appropriate languages. His developing morphology was language specific. We have only one example of an identifiable illocutionary act given in the data, that of requesting bread at 16 months. Although his request form in each case was the noun naming the item, he did use the noun appropriate to the person whose language he was speaking. It would seem that Louis was aware at a very early stage of the use of two languages in his environment, and of his ability to use those two languages. His emerging grammar was not one system, but two separate systems. Just how early is early when it comes to awareness of language, I will discuss later.

Hildegarde is more difficult to fit into our pattern precisely because Leopold states so many times that Hildegarde as a small child attempted to "make one unit out of the split presentation". Leopold's theoretical model, however, and his basic assumptions were different from those that we are using. For example he states (Vol. I, p. 22)

> From the literature on child-language I had expected a stage of mechanical sound-imitation, with induction of the meanings for the words thus acquired. Undoubtedly this stage plays a role with other children, although it is agreed that the

> understanding of words and sentences generally comes much earlier than speaking. In Hildegarde's case, the phase of mechanical imitation was completely lacking; meanings were always developed before sound-forms. The impulse for any kind of imitation was strikingly weak in this child. At later stages, too, she avoided saying a word before she understood it.

Again on page 25 of the same volume he asserts: "Her speaking progress was hampered by the lack of an impulse for imitation."

I would like to assume the possibility that Leopold's assumptions about Hildegarde's bilingualism may have been similar to his assumptions about the role of imitation in the language acquisition process ... a theory specific expectation. Let us examine her early speech development in the light of our model and the possible clues as to what might be evidence that the child is aware of two language systems and is attempting to form two grammars.

The first question to ask is if Hildegarde, like Louis, had an early bilingual lexicon. Leopold agrees that she did. Her lexicon at 1;7 includes dual items such as the following:

ja	yes
nass	all wet
Schnee	snow
nein	no
mehr	more
alle	all
Auge	eye
Ei	egg
heiss	hot

Additionally, there is a larger category of words that are similar in German and in English. Leopold could not decide, on the basis of Hildegarde's pronunciation whether to call these English or German, so he calls them English-German. These include such words as book, milk, mama, papa, apple, bed, etc.

She also had many words in English which were not a part of her German lexicon, and a few words in German which she did not know in English, or at least, Leopold never heard her use them in English.

Leopold cites the following instances of translation from one language to the other. At 1;6 Hildegarde's mother had been telling her "no, no!" and then she asked her rhetorically, "Don't you know what 'no, no' means?" Hildegarde answered, "nein, nein". At 1;10 Hildegarde's mother remarked to her father while they were driving, "Look at the cars." Hildegarde, without looking, replied, "Auto", with German pronunciation. At 1;8 upon being told "Licht aus" she replied "Light out". At 1;9 on being told to say "no more" she said "no mehr", and at 1;11 on being told at bedtime, "Alle kleinen Kinder sind jezt im Bett" she replied, "All babies Bett[3]". These Leopold calls not translations, but replacement of a passively familiar form by the actively current one. Given our definition of a translation, however, we may tentatively assign them to that category.

It is in the area of syntax and appropriate language usage that Hildegarde differs most from Louis and, as we shall see

later, from Mary. Leopold claims that Hildegarde mixed German words and English words "indiscriminately" in her sentences. An examination of her sentences as reported by Leopold in the third volume of his book shows that there may have been something less than indiscriminate mixing. Remembering that her father only noted the sentences which he actually heard, it is noteworthy that beyond a few pivot type constructions, most of her sentences at the two words stage were in English. She had some pivot-type constructions using the German "mehr" and both "all" and sometimes "alle". With both "mehr" and "all" her second word was either German or English, although he notes that she uses "more" also. The German "alle" may have had a different function, for it appeared in second position rather than in first. Her early sentences consisted of sentences like "all nass", "all gone", "all dry", but "Bath alle" (Bath all gone), bath being one of the words common to both languages and indeterminate as to which language it belonged at that stage. Her English sentences were more varied and showed a wider range of vocabulary. Her German sentences were also represented by other than these pivot-type sentences. (See Appendix B) Bitte was her standard request form in both languages. At 21 months she learned please and used it occasionally, but preferred at least with her parents, the more common, and perhaps more versatile bitte.

Hildegarde was also very late to learn that she should speak German to her father and English to her mother. But unlike Louis, Hildegarde had no reason to speak only German or

only English at home. Although her father spoke German to her, Hildegarde's mother spoke English to him. Although Hildegarde's mother spoke mostly English with her at home, while they were in Germany the child had heard her mother speaking German almost constantly. Leopold also notes that Hildegarde's mother often picked up quaint expression's of Hildegarde's and used them with her. If these expressions were English, German, or mixtures of the two, they were again used in her environment after she had said them. Thus, Hildegarde heard language mixing by those around her and she also knew that both her father and her mother understood her if she used both languages in any way she chose. It may be also that Leopold's "indiscriminate mixing" was used with him as a different kind of language and not with those that Hildegarde knew spoke only English. During stays with her relatives, Leopold notes that the child did not hear German for periods of one or two weeks at a time. It would surprise me to learn that her speech with her relatives was an "indiscriminate mixture".

A part of Hildegarde's early speech experience was a stay for three months in Germany just as she was beginning to talk. Leopold gives us a careful record of several things that happened then. During that visit, Hildegarde was exposed only to German. Prior to that time, she had understood both languages equally well and responded similarly to similar commands and games. At the beginning of the visit, Leopold notes the following incident: At home, Hildegarde used a clicking sound and turned her head to call

the squirrels and on the command "Call the squirrels". She had also used this sound with some canaries that she had at home. In Germany, on the command "Ruf den Vogel." She reacted in the same way, turning her head towards a bird that was present and making her clicking noise. This surprised Leopold very much because the sentence had not been practised. For awhile in Germany, she also understood her old familiar English commands, but towards the end of her visit, she seemed to have forgotten the English, and her speech in German had become progressively more advanced. On returning to the United States, Hildegarde had to relearn English, a process which Leopold says took several months. For awhile after their return, Hildegarde's mother continued to use German with her because she did not understand English. Obviously, when she went to Germany, she was aware of synonyms and reacted appropriately in both languages. She was somehow associating different systems with the same response, as noted by her spontaneous reaction to "Ruf den Vogel." Moreover, it seems that during her stay in Germany she ceased being bilingual and became monolingual German speaking. Her learning of English when she returned was similar to that of a second language learning experience. There is a question as to when we might call a language learning experience in children of that age a second language learning experience, but what seemed to characterize it was a period of two or three months in which she spoke almost no English at all, and then began speaking English again. Ronjat spoke of Louis's first three week visit with his French relatives as an "incubation period" because he did not come back speaking more French, but rather hesitating to say

new French words. It was after the second visit a few weeks later that Louis was called a "balanced bilingual".

So we have Hildegarde with early bilingual recognition of synonyms, also early production of synonyms, although this can a little later than with Louis, and early translation. Her syntax may not have been the 'one system' that Leopold claims that it was, although with him there were certainly sentences which were mixed, and her failure to use exclusively German or English with either her mother or her father may have been due to other factors than just the fact that she did not realize that there were two languages. Certainly one would expect that if she had to relearn English, there was some idea in her head that "something funny was going on" in the speech community around her. Leopold mentions that during this early period she was "preparing for active bilingualism". Perhaps we are quibbling about definitions, and this early "preparation" was what I am calling early "awareness of two systems." Thus Hildegarde, although her language experience was different from that of Louis shows some similarity in bilingual development.

Mary, like Louis, took her first words from a common vocabulary that we all used with her. Even Gloria at first used certain words with her from English. Ten days before Mary's first birthday I have the following words listed in her vocabulary:

dogi	=	doggie
dædi	=	daddy
k^huk^hi	=	cookie
bebi	=	baby
k^hik^hae	=	kitty cat
baba	=	bottle
babi	=	mommy
bu	=	boo

Evidence that she was developing a dual lexicon even then is shown by my entry on that same day that she began using a word for "perro" in Spanish, as well as an attempted version of "gato".

At 1;3 I have the following sample lexicon listed for Mary:

English	Spanish
shoe	zapato
doggie	perro
there!	ya![5]
oh!	oy!
kitty cat	gato

At the same time every word did not have a counterpart in the other language. For example, she used "Mira" in Spanish but not "look" in English. She used "bite" in English, but no translated equivalent in Spanish. At that time, there wasstill an undifferentiated set of words including names of members of the family, "no", and "baby". Before 1;6 she was calling Mommy and Daddy "mamá" and "papá" when she was speaking Spanish and differentiating the pronunciation of her sister's names in the two languages.

The early translation that I have for her occurred at 1;1 in the following manner: She was on her changing table and I said to her "Mary, don't fall." She responded in Spanish "Cae." translating the English to the Spanish. She also seemed to be making a conscious effort to sort out which words were a part of each system, and to play games involving the two systems. The following represents a sort of game that she liked to play with words at about the age of 1;4:

Mary: ?Que sone?[6] (pointing to item)
Me: Es toalla.
Mary: What's that? (pointing to same item)
Me: That's a towel.
Mary: ?Que sone?
Me: That's a towel.
Mary: ?Que sone? (insisting, with added emphasis)
Me: Es toalla.
Mary: ?What's that? (now satisfied and continuing the game)
etc.

Mary also differentiated according to the people in her environment. In order to tape her in Spanish consistently, I had to have Gloria play with her alone. In that manner, I acquired tapes of her in a monolingual Spanish speaking situation. In those tapes, her language is Spanish. In other tapes we use both languages and so does she. She never spoke Spanish to her grandparents, even though they tried to persuade her and asked her simple questions in Spanish, of which they speak only a few words with a very strong American accent. She refused to answer them when they asked her questions in Spanish.

With me her first language used was usually English, although at times she would spontaneously address me in Spanish. When I was speaking Spanish with her, however, she replied in Spanish. A sample bilingual conversation at about 1;4 went as follows:

Me: Mari, quieres leche?
Mary: Sí.
Me: Do you want some milk?
Mary: Yes.

On Mary I have more complete data on her early illocutionary acts. The act of requesting was usually accompanied by a gesture extending her hand towards the item that she wanted or to the place where that item was usually kept. Her request forms were not simply translations of each other, but in some cases were language specific. At 1;2 she was using seven different request forms, not including those in which she named the item that she was requesting.[7] These forms are listed below:

1) To request a drink when someone was drinking -- First applied to milk, then to any drink.

   English: More
   Spanish: Más

2) To request a sample of what a person was eating:

   English: Bite
   Spanish: Quiero (there was no inflectional ending on this word)

3) General request to be given an article, whether visible or not -- i.e. the item may be located in a specific place and she is pointing to that location -- to the refrigerator for milk, for example.

   English: Here
            Thank you
   Spanish: Quiero
            Dame

Of more than passing interest here is the fact that two of her request forms in Spanish were from a verb form of the adult language, while her request forms in English are always nouns or words with other syntactic functions and not verbs. In terms of specific languages, this says that the Spanish verb is more salient than English and reflects the fact that the verb "querer" in Spanish needs neither a subject nor object to be expressed with it, although

"want" in English must have an object expressed. (In informal speech the subject and auxiliary are often dropped) For example, to ask a person if he would like something in English, the following are possible questions:

(Do you) want some?
(Do you) want some milk?
(Do you) want a bite?

with stress and rising pitch on the rightmost element in the sentence. In Spanish, the single word "? Quieres? " is a complete sentence and could be used for all of the questions above. In English also the request made to her to give up something that she had was preceded by the deictic "here" and the form "Here, give it to me" was what she heard, with "here" receiving the stress. In Spanish, the sentence "Dame" was used alone without the deictic element before it. In each language it was the perceptually salient part of the utterance that was used in the illocutionary act.[7]

In her early syntactic development, she consistently joined words of the same language. Her deictic function word in Spanish was "Mira" which served as a syntactic operator and was joined with other words, almost always Spanish. In English, she used "there's the" in a similar type construction. On a tape made at 15 months, in both bilingual and monolingual situations there is only one sentence out of 23 two and three word utterances that is mixed, and that occurred in a bilingual situation, where we were interchangeably using "bunny rabbit" and "conejito" and trying to get her to say "conejito". She said, rather, "Mira bunny rabbit." There is no mixing in either monolingual situation. For a sample of sentences from that tape, see Appendix C. Reviewing the early

development of the three children, we see that both Louis and Mary exhibited all five kinds of language behavior given as possible evidence of early awareness of the existence of two language systems in the environment. No one of these in itself proved sufficient to say that the child was aware, but the existence of all five adds support to the hypothesis that the bilingual child may be aware of the two languages in the pre-speech period. By the time the child is using two word sentences and forming these sentences in two languages in ways which are not transliterations of each other, then it is possible to say that the child has two grammars which he is developing and not one. It is probably inevitable that the child in the course of the construction of his two grammars will make mistakes and transfer to one language rules of syntax that have proved successful in the other. The monolingual child, however, also makes mistakes in the course of developing one grammar.

What about Hildegarde? Why was she an exception? She did have a dual lexicon, and she did translate. She did combine words in sentences in language specific ways, as well as mix them. But her experience was different from that of the other two children. Except for three months when she was in Germany, there was no one in her immediate environment with whom she had to communicate in either language. Both parents were bilingual. By the age of 2;5 she was asking her father specifically how to say words in German, even though she was still mixing words in sentences and not consistently addressing him in German. So, even when we know that she was aware of two languages, she did not exhibit all forms of behavior that we have listed above as

evidence of awareness of the two systems. Can we still say, then, that she was conscious of the two languages at the pre-speech period? From Leopold we have well documented evidence that before she began speaking she was responding to both languages and that she understood them. But at the age of one year she became a monolingual German-speaking child. Hildegarde's need for time to relearn English at the age of 1;2 is perhaps our strongest evidence that these children were aware of two languages before they began speaking. Children do not learn words and sentences from casual contact with the language. Their first words are usually those which have been repeated to them time and time again. From all of the words and sentences which are said to them, children must pick out syntactic and semantic features of these sentences which will enable them to communicate. And they respond to these features before they use them. Small children learning a second language in a natural situation have been known to go for some time without speaking before they begin to use that second language. They have to listen and assimilate features of the new language first. Infants have been shown to perceive suprasegmental features of language before they begin to speak. At a very early age, they are able to distinguish speech sounds from non-speech sounds. Given this ability and given equivalent development of two language systems in at least two of the subjects, I claim that it is at least possible for infants to perceive two discrete language systems in the pre-speech period. In view of the time lag necessary between comprehension and production in child speech, it is probable that they do.

Native Languages of The Bilingual Child

We have claimed that the children in this study may be said to have two 'native languages'. In order to support that claim in light of later development of each child it is again necessary to define terms and set limits. The term 'native language' is clear and unambiguous when used with the person raised in a monolingual environment. For the person raised in a bilingual environment, however, unless we accept the notion that a person may have more than one native language, we are left with only some artificial manner of determining which of the two is a native language. One possible solution is to say that if a child has a dominant language and a subordinate language, his dominant language is his 'native language'. Immediately we run into several difficulties with this definition. As we have seen with Louis, dominance patterns in childhood may shift drastically, if one is able to define dominance in an adequate way. In an adult, it is often easy to declare a dominant-subordinate relation between the languages that the adult speaks. This relationship may come about in several ways: The clearest case is that in which a first language has been learned well and a second language learned imperfectly, with the first language being the language which is used the majority of the time. On the other hand, a person may have learned a first language well, but through lack of use over a period of years, become dominant in a second. In this case the 'native language' and the 'dominant language' are not the same. In the case of a nearly balanced bilingual, the adult's dominant language may simply be the language

in which he has had his most recent language experience. The infinite variety of types of adult bilinguals has been discussed by Mackey (1968) and others. If it is difficult to associate native language with dominant language in the case of adults, it is even more difficult in the case of the bilingual child. The language acquisition process of the child is not a synchronic problem, but a diachronic one. (The same may be said for adults, but it is easier in the case of adults to put a time-lock on his language competency and declare a certain type of speech representative of that competency, with confidence that although change may occur, it will not usually be drastic change in a short period of time.) At what point in the language development of the child do we put a time-lock on his speech and determine for any period of time his language competency? Certainly for the sake of discussing emerging grammars, we do that at a certain point, but Bloom found that even in so doing, certain facets of the child's speech represented syntactic patterns which were emerging, but which could not be called a systematic part of the child's grammar. If Hildegarde had been given a language dominance test immediately after her return from Germany, she would have been declared German dominant. Yet, after only a few days back in the English speaking environment, her German was receding and again she was becoming English dominant. If the child's linguistic experience has been qualitatively different in each language, his dominant language may differ with the subject under discussion. In the case of bilingual children, even the term 'dominance' is in need of

definition. Is it the child's "most developed" language? According to what criteria, lexical, syntactic, or phonological? Is it the language in which he expresses himself most easily? This may vary depending on the subject under discussion. Perhaps we may call the child's dominant language the one in which his thought process are occurring, as evidenced by his egocentric speech. It is probably true, as in the case of Louis and of Mary, that the egocentric speech of the bilingual child will vary according to what listeners are present in his environment to hear him.

All of the above questions would simply be matters of definition and playing with terms at an abstract level, except for the fact that in bilingual programs in the United States today, children are being assigned to different language tracks on the basis of their 'native language', 'dominant language' or 'mother tongue', terms which are poorly defined and in the case of truly bilingual children, inapplicable.[8] While observing in one bilingual classroom at the second grade level, where the children were separated for half of the school day according to dominant language, I noticed that, although the teacher was conducting the class in Spanish and the children were interacting with her in Spanish, several of them were making their "asides", or comments on what was happening, in English. My personal observation at the time was that if these children whose egocentric speech was in English (perhaps for my benefit) were in the Spanish language classroom because of a goal to produce bilinguals who are educated in both their languages, they were well placed. If, however,

they were placed in the Spanish language track through some notion that the child should be taught in his dominant language first because of possibility of harm to his conceptualization processes, then these children were misplaced. But at any rate, it probably would not matter with these particular children one way or the other, because they would probably benefit from instruction in both languages and transfer concepts and experiences between languages quite well.

In support of the idea that bilingual children may have two native languages, even though they may be dominant in one or the other at any point in the process of their development, let us look at the data from Mary at 3;3.

A videotape was made of Mary with a speaker that she believed to be monolingual Spanish speaking. The interview was an unstructured play session with toys that Mary brought from home. These included a Weebles airport and people and a Fisher-price doll house and wooden characters that go in it. The characters represented animals, children, and adults. There were also books and a child's set of tables and chairs. The videotape was made for two purposes, to get data from Mary and to investigate the use of videotape as opposed to audiotape for the gathering of data from bilingual children. Since only one hour of tape was available, the session was conducted in Spanish because I knew that in speaking English, which is the language most often used in her environment, she never mixes elements from Spanish. What was being investigated was her ability to use Spanish and her willingness to use Spanish, as well as any regularities in

interference patterns from English to Spanish. In other words, can we say that Mary is a bilingual child who speaks Spanish and English?

From a preliminary analysis there are several facts about the tape which are very interesting. Of 202 utterances which can be understood on that tape, 152 of them are in Spanish, 37 of them are in English, and only 13 represent some kind of language mixing or what might be called 'interference.' Two of these represent what is actually a speech variety of the Spanish that we use at home. (Ven aca, O.K.? - where O.K. is used as a tag question in Spanish) Five sentences represent some sort of phonological interference, e.g. the use of "refrigerator" with phonetic adaptation, rather than the Spanish "refrigerador" which she also knows, and curiously, the alternating use of English and Spanish pronunciations of "top", "tapa" -- using the English phonetics in the Spanish sentence and the Spanish phonetics in the English sentence. Five of the sentences represent lexical substitution of the English word where there is a gap in her Spanish lexicon, e.g., "fly" and "steer". The word "under" which she used in English because she does not know it in Spanish caused a switch in the rest of the sentence to English, giving the sentence "Y el libros under the table." Only one sentence might be identified as a slip of the tongue when she was angry and said to the interviewer "Se already comio". Of the English sentences, 22 of them were heard in the first half hour, and they diminished in number and frequency after that. Of the total, 17 utterances represent her conversations to and for her dolls and animals. These were mostly in English in the beginning, but at the end of the hour, these figures

were "speaking Spanish." Nine of the English utterances were to herself, or to nobody in particular, representing some sort of egocentric speech. At the end of the hour, these also had decreased, and at one point she started a sentence in which she was giving herself directions in English, "I'm just gonna..." looked at the interviewer, sighed, and continued her play without speech. In the entire session, only two utterances in English were actually addressed to the interviewer.

The preponderance of her speech then in the monolingual Spanish situation was in Spanish, with the percentage increasing with increasing immersion in that language. It is important to ask about those utterances if they represent simply a transliteration of English sentences, or if they represent a language systematically different from English as Spanish is systematically different from English. In other words, does she use one syntax or two? Is her Spanish really Spanish, or is it a Spanish lexicon imposed upon English syntax? The most glaring deviations from an adult Spanish grammar is in the area of inflections. Sometimes she uses the correct inflectional ending on the verb and sometimes not. Sometimes her article and noun agree, and sometimes not. In other words, this is a picture of a system emerging, but not yet learned in its entirety. This pattern was noted among Spanish speaking children in New Mexico also. (Brisk, 1974) Otherwise, her Spanish was systematically different from English. In English, subject pronouns are obligatory, in Spanish, they are almost freely deletable. The only ones of Mary's sentences in Spanish to show a subject pronoun were those where it was correctly placed for emphasis with appropriate stress patterns accompanying it. A common topical-

ization process in Spanish is accomplished by movement of the direct object to the front of the sentence. This was correctly done in the sentence, "Y el mono, ¿ dónde esta?" In the same session, topicalization was accomplished in English by shifting stress and intonation patterns as she said, "Where is the bananas?" The majority of her full sentences were constructions with a main verb plus an infinitive. Four main verb constructions were represented, querer + infinitive = want to; ir a + infinitive = going to; poder + infinitive = can, be able to; and tener que + infinitive = have to. All of these have counterparts in English, but in English, the conjoining particle is always the particle "to" In Spanish, some verbs require no conjoining particle, others require a specific particle, which is not the equivalent of the particle in English. Mary's language reflects the Spanish system in a different system, with the correct use of conjoining particle. The Reflexive pronoun system in Spanish performs a variety of functions which are performed in English by the particle system. For example, where English uses a particle to express the change of state or inchoative notions of "sit down, stand up, go away, etc.". Spanish will use a reflexive construction. Mary's Spanish showed an understanding and ability to use the Spanish reflexive system in these functions in such sentences as "Yo me voy a dormir con el chango", "El avion se va" and "Quedese en la cama". Her one past tense was correctly formed, here probably a precurser of a system emerging. This showed up in the sentences, "Ya comio." and "Se already comio." The two copular verbs in Spanish were used correctly, as in the sentences "No es la manana."

and "No está el bebito." All of the above evidence points to the fact that Mary is indeed constructing a Spanish grammar and is not simply laying lexical items from one language on top of the syntax of the other. It also reflects the fact that this language is being learned in a natural way in much the same way that a monolingual child learns his language.

Studies of child speech in Puerto Rico (Gili Gaya 1972) show Spanish speaking four year olds to have some of the same gaps in their system in Spanish that Mary exhibits. Certain tense inflections and wide use of descriptive adjectives and certain prepositions seem to be properties of the language of the older child between six and seven years of age, and not often of the child who is four or under. Except for the fact that the Puerto Rican children are more consistent in their use of article and noun agreement, Mary's Spanish does not deviate greatly in complexity from that of the four year old monolingual Spanish speakers. The speech of the New Mexican children is even more like that of Mary's. They are unsure of the article +Noun agreement patterns, they occasionally misuse estar in exactly the same way as Mary (e.g. she frequently uses "Yo estoy la mama." instead of the correct "Yo soy la mama." of standard adult Spanish). They frequently used the logical subject as the actual subject in such impersonal constructions as "yo gusta" instead of "me gusta." One of Mary's sentences from the videotape was "Yo no gusta."

Mary's Spanish, then is definitely Spanish. There is a discrepancy, however, between her Spanish and her English, partly because her linguistic experience in English has been so much

greater than in Spanish. Her Spanish language experience has been for the most part in the home with occasional trips to the store and other places in the local area where people speak Spanish. In English, however, she has flown to Alabama, she has watched television, she has visited the zoo, she has read more books than in Spanish, etc.

In spite of the fact that Mary has a broader lexical base in English than in Spanish, we must conclude, I believe, that she is also a native speaker of Spanish. She has spoken Spanish since she began speaking, and her Spanish at the age of 3;3 is equivalent to that of other bilingual Spanish speaking children as well as many monolingual Spanish speaking children. Additionally, Mary acquires new lexical items in Spanish in a natural way. In one incident on the videotape, the interviewer used with her the expression, "no se arranca", a new term to Mary. A few minutes later, Mary herself in appropriate circumstances used the same word. In English, her grandmother told her one day, "Don't bother me. I'm trying to concentrate." Mary was heard to tell her older sister a few minutes later, using the word appropriately, "I'm concentrating."

Conclusion and Further Questions

In summary, we have shown that children raised in a bilingual environment do exhibit behavior which leads us to believe that they may be aware at the pre-speech period of the use of two languages in their linguistic environment, and that they are capable of constructing from the beginning two grammars and

not one. We have also discussed the notion that language dominance in bilingual children is not a simple one and may not even be applicable in the same way that it is used with bilingual adults. In the study of one bilingual child who might be considered dominant in one language, we have shown that she indeed does have two separate grammars, one for each language, and that her syntactic development in her lesser used language is not in great degree deviant from that of monolingual speakers of that language and other bilingual speakers of her two languages. We must consider that children raised in a bilingual environment have two native languages and not one. We realize of course that this conclusion could be carried to the extreme, but any treatment of bilingualism ultimately ends up with the same problem. There is a point at which these conclusions do not apply, because of one or another circumstance. That point, however, is very hard to determine. In this case as in any other discussion of bilingualism, that point will have to remain vague and indeterminate. There are bilingual children whom we can definitely categorize with the children discussed here. There are those we can definitely exclude from that category. Somewhere in between there is a group where it is not easy to determine what is the case.

Many questions about bilingual language acquisition can be raised. What are the effects of differing linguistic environments on the competence of the bilingual child? How does transfer between languages, either negative or positive, work in the bilingual child? To what extent can we predict language mixing in the child and what are the constraints on that mixing. Is there directionality

in language mixing that is dependent on the linguistic systems involved and not on which language happens to predominate in the environment ? Granted that the child,all else being equal, has the ability to learn two language systems at once, what are the constraints, if any, on the child's ability, and what help does he bring with him that would enable him to construct two grammars? To what extent is the performance of the child in a bilingual language setting a reflection of his competence in the use of two language systems? How does the bilingual child do it?

Notes

1. In this paper the term bilingualism has been used to refer to the use of only two languages. It is possible that discussion here could also be applied to the acquisition and use of three or more languages.

2. This is the sentence "auch vache". Ronjat cites this sentence as a rare instance in which a French word is placed within a German sentence. Most of Louis' language mixing was the other way around, i.e. German words were used with French syntactic operators.

3. Bett is one of those words which Leopold had difficulty assigning to one language or the other. Here it could as easily be English as German.

4. This word later was differentiated when she started putting glides on the English vowels and for awhile she had a word with an exaggerated glide, e.g., be^{y}bi^{y} as opposed to bebi.

5. There and ya were both used to indicate that a task was completed, depending on the language that she was using at the time.

6. ?Que sone? was her form for "Que es?", probably from the question put to her, "Que son estos?".

7. Later when she was using longer sentences she developed an idiosyncratic request form of asking and answering the question "Do you wnat some milk? Yes." Still later, when she was forming correct requests such as "I want some milk" and "please may I have some milk?" she had an urgent request form, again formulating the request and also the answer that she expected, such as "Please may I have some milk? Yes, ma'am."

8. In a discussion with a kindergarten teacher in a bilingual program, I asked what she did with children who entered the school as balanced bilinguals. This teacher had asked the same question to one of the directors of the program and received the reply, "Put him in the track of the language that his mother speaks."

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APPENDIX A

Louis' bilingual environment and language progress:

	Age:	German	French
Bilingual - German Predominates	1, 2 months	Mother grandmother 2 maids aunt	Father for 5 weeks - 6 people in Ronjat's family
	12 months (2 week vacation in Black Forest)	hotel employees and clientele Mother	Father
	up to 20 months - knows he is more fluent in German than French. Puts German words in French sentences, not vice versa.		
Transition - Fr. advances	1;10 (3 weeks with French relatives)	Mother maid	Father Father & Mother of family 4 children 3 female servants
	1;11 - returns home - voluntarily speaks German more than French does not volunteer new French words until end of the month.		
	2;2 (5 weeks in country with other relatives)	Mother maid	Father 7 people in the family butler, cook chambermaid
balance	The two languages equalize		
bilingual - Fr. pre-dominates	2;3 - 2;6	Mother nanny, cook maid	Father cook nanny
	2;9 - uses French words in German sentences, rarely vice versa. Monologues are in French.		
	2;10 - 2;11 (a month in Paris w/his Fr. grand-mother)	Grandmother mother aunt	everyone else
	Monologues in French, little progress in German.		
German again develops	3;7 (at home)	grandmother, mother, aunt, nanny	father, maid, cook
balance	3;9 - languages again equalize and remain equalized.		
	Monologues in both languages, takes part in adult conversation in appropriate alnguage. Corrects adults for language mixing & inappropriate usage.		

APPENDIX B

Samples of Hildegarde's sentences from 1;7 - 1;11

English	German	Mixed or indeterminate
poor mama	armer wauwau	Bitte, please
poor papa	armer Mann	Down, bitte
naughty rockaby baby	nein, nein, mama	Bitte up
pretty dress	hase bett	Bitte dress
pretty coat	wisch ab	Buch (book) away
big by-by	Schuhe aus?	my auf
this bottle	mein Ball	water auf
go away	Dada wascht	all nass
walk in	Frau mmmm (eats)	big bauen
push in	Fritzchen steht	light aus
throw away	Mama baden	this zu
cover up	Mama kuss	door zu
lie down	Papa patsch	bath (or Bad) alle
watch mama	Mary Alice's wehweh alle	Don't speil, miau
dress me	Da ist es	I speil Nackedie
this on	Dicken Bauch waschen	Papa make Bau
my stocking	Mama shh mehr	Mehr light
I do	Mama mehr shh	No mehr
this mine	Papa mehr baden	
this chirch		
mama ne hat		
all piece broke		
I see you		
door open		
all through		
all gone		

Pivot type words in which mixes lexical items more often

German	English
Bitte	all
Mehr	big
alle	
zu	
auf	
aus	

APPENDIX C

Mary's sentences from first tape, age 15 months:

English	Spanish	Mixed
There's the doggie	Allí está	Mira bunny rabbit
" " flower		
" " bunny	Dame niño	
" " baby		
" " open	ay, bonito	
This is the baby	Mira bebi	
	" zapato	
My baba		
here, mama	Bebi zapato	
That Mommy	" vestido	
Hi baby		
" Daddy	Quiero pájaro	
	más jugo	
Is that Abbie?	no más jugo	
	Abbie mi-mi	

APPENDIX D

Mary's Spanish at 39 months:

Sentences where mixing occurred (13 out of 202 utterances)
Mixing in standard usage in the home:
Ven aca, ¿O.K.? Yo quiero hacer potty.
Phonological alterations
Mira en el refrigerator. Y el top (two times) Give me a tapa, tapa (two times)
Lexical substitution
Y el libros under the table ¿Quien va de fly? (two times) Ellos van a steer (two times) Sí, stickers
Unexplained
Se already comió

Samples of grammatical Spanish sentences:

Tu vas a dormir allá
Es por mi -- por mi cama
No es la mañana
Esta es mi cama
Y el bebito va a dormir
No está el bebito
No tiene hambre.
? Tienes hambre?
Ya comió
Se puede comer banana
Todos a dormir
Quiere dormir con el oso
El avion se va
Yo quiero dormir aquí
Dejalo ahi
Yo voy a dormir aquí
¿Dónde está mi niñito?
No puedo
Me voy a sentar aqui
Porque tienen que dormir.
Es noche todavía.
Ella grita mamá, mamá.
Sí, se arranca.
Yo me voy a dormir con el chango.